

THERMALLY STABLE LEAN NO_x TRAP

Abstract

The present invention provides a method of removing harmful gases from an automobile exhaust. The method of the invention comprises contacting a thermally stable NO_x trap composition with a first exhaust gas mixture at a temperature of at least 200°C. The first exhaust gas mixture includes exhaust gases from an internal combustion engine operating in a fuel-lean condition. After, NO_x has been absorbed onto the NO_x absorber material, the NO_x trap composition is then contacted with a second exhaust gas composition. In this step, the second exhaust gas mixture includes exhaust gases from an internal combustion engine operating in a fuel-rich condition. The present invention also provides the NO_x trap composition used in the method. The NO_x trap of the invention includes a precious metal, a NO_x absorber material, an oxide that inhibits the decrease in NO_x storing ability of the NO_x trap composition, and a support material.